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ABSTRACT

Conducting institutional research on a complex issue such as retention provides the opportunity to use the method of comparative analysis through which numerous independent comparisons can provide the institution with a more complete picture of an issue. Researchers have done different types of comparative analysis at one university over the last several years, including analyses that were: (1) internal; (2) external; (3) entry/intent comparisons; and (4) demographic comparisons. Each of these comparisons provides a unique perspective on the retention and success of students at the institution, along with unique challenges and problems. The paper discusses these perspectives and challenges as they have limited the effectiveness of the analyses. Such comparative analyses are simple, can be done repeatedly, and can draw on existing groups, but they are limited in that they do not help understand student attrition and are sometimes limited by group size. (Contains 8 figures and 25 references.) (Author/SLD)

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Retention Research: Issues in Comparative Analysis

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Retention Research: Issues in Comparative Analysis

Abstract

Conducting institutional research on a complex issue such as retention provides the opportunity to utilize the method of comparative analysis whereby numerous independent comparisons can provide the institution with a more complete picture of an issue. We have done numerous types of comparative analyses on retention at our institution over the last several years. Each of these comparisons provides a unique perspective on the retention and success of students at our institution, along with its own unique challenges and problems. In presenting the results of the various comparisons, we identify and discuss these perspectives and challenges as they have limited the effectiveness of our methodology.

Introduction

Conducting institutional research on a complex University issue such as retention provides unique challenges to the institutional researcher. The limitation of influencing action in retention is that people make judgments about the need to improve retention based on a simple rule: "How are we doing?" is the prompt and if the answer is "We do as well as others like us" or "As well as we can expect to do," then it is not likely that things will change. To bring data to bear on these questions and to further look for the specific areas where an institution might want to focus its resources, a multi-method approach seems prudent. We have done numerous types of comparative analyses on retention in our institution over the last several years. This paper discusses those comparative analyses and the issues involved in the utilization of the information. The first part in this discussion provides a brief background on retention as a strategic issue. The second part looks at the types of comparative studies that can be done with examples from what we have done. The third part looks at some of the things we have learned within the template of Chickering and Gamson's (1987) seven principles good practice in undergraduate education.

Background on Retention

Two comprehensive conceptual models have emerged to guide the study of student persistence: Tinto's Student Integration Model (Tinto, 1975, 1993) and Bean's Student Attrition Model (Bean, 1980, 1983, 1990). Tinto (1975) advanced the idea that the fit between the student and the institution plays a key role in the likelihood of persistence (Cabrera, Nora and Castaneda, 1993). Accordingly, the degree of institutional commitment a student feels, and the subsequent persistence, is shaped by the congruence between student motivation and ability and the institution's academic and social characteristics.

Bean (1983) reflected on the link between attitudes and behaviors as theorized by Fishbein and Ajzen (1975), who wrote that through a person's intentions attitudes predict subsequent behaviors. Bean's Student Attrition Model posits that students' beliefs about their experiences in school affect their intention to stay and subsequent persistence (Bean, 1990). This model also recognizes the influence of external (to the institution) factors on retention, something many researchers have found missing from Tinto's model (Bean, 1985; Cabrera, Nora and Castaneda, 1993).

These two theories have spawned an enormous amount of research on the area of student retention. Many of these studies were done to confirm or deny the basic tenets of the theories (Cabrera, Castaneda, Nora and Hengstler, 1992; Nora and Cabrera, 1993; Pascarella and Chapman, 1983; Pascarella and Terenzini, 1983; Stage, 1989) or have integrated these two approaches into a singular framework (Cabrera, Nora and Castaneda, 1993). Other studies have looked at different strata within the student population, including:

- Minority students (Bean and Hull, 1984; Fuertes and Sedlacek, 1994; Grandy, 1998; King and Chepyator-Thomson, 1996; Nora, 1987; Ting, 2000);
- Commuter students (Johnson, 1997);
- Graduate students (Cooke, Sims and Peyrefitte, 1995; King and Chepyator-Thomson, 1996),
- Two-year college students (Bers and Smith, 1989; Pascarella, Smart and Ethington, 1986);
- Transfer students (McCormick and Carroll, 1997);
- Non-traditional and adult students (Bean and Metzner, 1985; Shields, 1994).

Still others have looked at a multitude of factors that potentially affect persistence, including:

- Academic aptitude (Kennedy, Gordon and Gordon, 1995; McGrath and Braunstein, 1997; Fuertes and Sedlacek, 1994);
- Student-Faculty interactions (Nagda et al., 1998; Pascarella, 1980);
- Student services (Junn, Fuller and Derrell, 1996; St. John, 2000; Turner and Berry, 2000);
- Financial factors (Cabrera, Nora and Castaneda, 1992; Cabrera, Stampen, and Hansen, 1990; McGrath and Braunstein, 1997; Nora and Horvath, 1989);
- Learning communities in and outside of the classroom (Baker and Pomerantz, 2000; Johnson, 2000; Tinto, 1997).

Retention as a Strategic Issue

If so much is known about student retention, why is reluctance to make changes aimed at improving retention? One reason could be that the changes require shifts in administrative and faculty cultures. These shifts must be learned, and for learning to occur, a strategic process is necessary to relate the shifts to the context of the institution and the values of the major audience. Delaney (1997) argues that for institutional research to be successful, it needs to go beyond simply collecting and reporting data. The major obstacle to supporting efforts to better understand student retention is persuading stakeholders at all levels of the institution of the importance of student retention. As McLaughlin, Brozovsky and McLaughlin (1998) put it, institutional researchers must persuade institutional stakeholders that student retention should be treated as a strategic issue, which they define as issues that can have serious consequences for the long-term success of the institution.

That retention is an important issue seems beyond debate, given that a variety of federal, state and private consortia request the reporting of these data. Also retention data are being used as indicators of academic quality in the computation of institutional scores for the U.S. News and World Report annual college rankings (Graham and Morse, 1998). While the debate continues over the efficacy of the U.S. News methodology (Cronin, 2000), few can argue the importance of such rankings in the enrollment management and institutional research process (Monks and Ehrenberg, 1999). Yet, getting this issue onto the institutional radar so that key organizational stakeholders take notice appears to be a near-universal challenge for institutional researchers (McLaughlin et al., 1998)

The complexity involved in creating any systematic evaluation of a key strategic issue is demonstrated by Dolence (1991). To develop an effective research agenda, he suggests an evaluation matrix consisting of the relationship between a dozen criteria and four specific dimensions: how decisions are made; what information and data are available; what planning processes the institution engages in; and if and how the "right" people in the institution are involved. The twelve criteria he suggests include leadership, comprehensiveness, key performance indicators and participation. Table 1 displays four of Dolence's criteria arrayed across the four dimensions considered. The more of these questions that are answered in the affirmative, the more likely it is that the institution is primed for utilization of the information obtained through the study.

Table 1
Sample Evaluation Matrix for Retention Studies
(adapted from Dolence, 1991)

Criteria	Decisions	Information and Data	Processes	People
Leadership	Are decisions made with an awareness of environmental trends and institutional strengths, weaknesses, values and resources?	Are the data collected and analyzed consistent with the decisions faced by the institution?	Does the institution engage in a formal planning process that sets the key decisions?	Are the communication processes of the institution adequate to sustain a strategic focus?
Comprehensiveness	Are individual and unit responsibilities clearly articulated and understood?	Is the quantity of data analyzed sufficient for sound decisions?	Are processes reviewed and revised to eliminate redundancy?	Are the right people involved in the retention of students?
Key Performance Indicators	Are there clear indicators of success with respect to retention and are they articulated and understood?	Are the indicators measurable and are data available routinely?	Are the indicators of success monitored in an appropriate time frame?	Are the indicators of success tied to specific individuals or units?
Participation	Is there adequate participation by constituents in decision-making?	Is information shared in an appropriate manner?	Is there a formal participative process employed?	Do people feel like they are part of the strategy of the institution?

Indeed, information utilization is a primary concern for institutional and evaluation researchers, as they frequently encounter indifference from decision-makers and other institutional stakeholders (Ewell, 1989). Kinnick (1985) distinguished between technical and organizational obstacles that impede the otherwise smooth flow of information from researcher to decision-maker. Kinnick and Ricks (1993) provide a model (adapted from Ewell, 1989) of the factors that influence information utilization. These factors essentially fall into characteristics of the organization (the power structure, the organizational climate, and the communication structure), the researcher, the decision-maker and the information.

So how does the researcher avoid these pitfalls and effectively convey the information to the decision-maker? Kinnick (1985) offers a number of organizational and data presentation strategies for increasing the use of outcomes information. The organizational strategies involve attempts to incorporate the new information into ongoing institutional activities, such as academic program review and strategic planning and forecasting. The data presentation strategies include more use of graphics, providing multiple comparisons across different institutional categories, and utilizing short, issue-specific reports. Kinnick and Ricks (1993) use a case study approach to demonstrate stages of implementing a change process. In a successful retention project one of their specific recommendations

is that "the use of multiple strategies for gathering information to address issues of retention is imperative" (p. 68).

Levitz, Noel and Richter (1999) suggest presenting the issue of student attrition in terms of lost tuition revenue. By creating a revenue model that calculates tuition dollars lost through student attrition, they found that even a small increase in student retention resulted in significant savings. Since retention is ultimately a long-term goal and will result in institutional change, Levitz, Noel and Richter also suggest tips on how to get key stakeholders involved with what will most likely be viewed as an unwanted or unneeded change. They suggest carefully selecting a new retention task force to establish research guidelines and set reasonable priorities and action plans. They also state that it is important to increase the institutional understanding of what retention means, and to use research to challenge the myths and preconceptions of key administrators and faculty members.

McLaughlin et al. (1998) proposed a sequence of events that could be utilized to change institutional attitudes about the importance placed on retention efforts. They suggest that institutional researchers must challenge the long held preconceptions and complex predispositions of key institutional stakeholders. By drawing an analogy to the work of Kubler-Ross (1993) on coping with death, they suggest that stakeholders go through several stages before they are willing to accept what is perceived as undesirable change. These stages are, in order of occurrence, denial, hostility, bargaining, depression and finally acceptance. They recommend a multimethod approach for research in retention in order to move the institutional stakeholders through these stages to acceptance.

Seven Principles of Good Practice in Undergraduate Education

The framework for considering the value of the various analyses in the context of the institution comes from the Chickering and Gamson (1987) study of the seven principles of good practice in undergraduate learning. These seven principles are:

1. Good practice encourages contact between students and faculty
2. Good practice develops reciprocity and cooperation among students
3. Good practice uses active learning techniques
4. Good practice gives prompt feedback
5. Good practice emphasizes time on task
6. Good practice communicated high expectations
7. Good practice respects diverse talents and ways of learning

Evidently, these principles are directed at faculty and university administrators and the students are the beneficiaries. By re-framing these principles to reflect institutional researcher and stakeholder interactions, we feel that we have an interesting framework in which to evaluate the efficacy of our communications with the institution regarding studies of student retention. In this case, the principles would be directed at institutional researchers with various audiences of stakeholders being the beneficiaries.

First the institutional researcher must determine who the audience is for retention research. This looks at the "people" column of Dolence's matrix. At DePaul, as is probably the case at many institutions across the country, there are numerous audiences. Some of these are not specific individuals, but general groups of stakeholders like students, faculty and enrollment management administrators. For example, the student is interested in his/her likelihood of success at your institutions, compared to other institutions. The faculty - as the public face of the institution for the student - have a general interest as well, as they provide the primary mechanism by which students persist and graduate. Therefore, they are usually the ones asked to change and to learn new ways. Offices for enrollment management are interested in both marketing the institution and seeking the niche

of students who will perform well at the institution. They would also like the see the number of continuing students increase, so they can be more selective when bringing in new students. This is also related to the publication of US News and other rating groups that use graduation and retention as measures of institutional desirability.

However, at most institutions, there are probably two groups of individuals who would be considered primary audiences. As a private institution, DePaul's resources are determined and allocated based on the credit hours generated by the different colleges. Thus, the individual college deans have a vested interest in the persistence of their students. Some public institutions, such as those in Virginia and South Carolina, also need to attend to their legislatures since state resources can be allocated based partly on student retention and graduation. These individuals would represent one primary audience for an institution.

The second primary audience consists of those individuals assigned the responsibility to monitor and improve student success. At DePaul, three of the major groups of individuals assigned this responsibility are the First Year Program, University Academic Advising, and the Office of Multicultural Student Affairs. Since the majority of losses to new freshman cohorts occur between the first and second years, the administrators and faculty responsible for the First-Year program constitute a major audience of our research on this group of students. Many transfer students have reported problems and difficulties in the transfer advising process, an issue of great concern to the administrators of the new Advising Center. This center has become a key audience to studies on transfer student retention, as well as student success in general. The Office of Multicultural Student Affairs runs a "voluntary, comprehensive, first-year retention initiative" designed to assist first-year/transfer multicultural students in their transition to our university and is a key audience to studies focusing on the differences in retention between different student demographic groups.

The Present Study

In an effort to advance the institutional conversations on the retention and graduation of students at DePaul University, the Office of Institutional Planning and Research has undertaken a number of independent studies on this issue. The following are some of the specific comparisons we have done:

1. **Internal Comparisons:** This is the method of retention studies most commonly utilized by institutions and typically one of two methodologies, if not both:
   - Cohort-by-cohort comparison - where a set of cohorts are identified and their one-year retention and six-year graduation rates are compared.
   - Longitudinal Comparisons - where cohorts are tracked over multiple years of enrollment, allowing for the researcher to look at the time and magnitude of the losses to the cohort. For example, while the majority of losses to the cohort occur after the first-year, an equal percentage is lost between the second and sixth years, although the reasons for the losses may change.

   These internal comparisons allow for discussions of improvements and also possible interpretations concerning the impact of various programs and changing contextual conditions.
2. **External Comparison**: Being able to benchmark your institution's retention with that of other institutions provides an external reference of how well you are doing. This can be a powerful tool for pressing upon stakeholders the importance of retention as a strategic issue. Using an approach similar to the one outlined by Camp (1989), we identified a list of institutions that are similar in key statistical characteristics. Also we selected these from the other institutions who belong to the Consortium on Student Retention Data Exchange (CSRDE) who provide comparison data for a set of selected institutions.

3. **Entry/Intent Comparisons**: The typical retention study focuses on the cohort of first-time, full-time degree seeking students. However, these students are quickly becoming the minority at our institution as well as in many other institutions. Therefore, we have done studies on the retention of transfer students, professional students, and part-time adult students. The studies for each of these different student populations provide a more complete institutional picture of student retention than can be understood from strictly looking at the traditional student.
4. **Demographic Comparisons:** This is not actually a separate class of studies, as demographic comparisons are conducted as a routine part of all studies on retention. However, it is important to compare the retention of students based on their demographic character, including race, gender, college and program/major. These are essential for demonstrating to departmental and college leaders that retention is a key strategic issue at their organizational level and involve the comparison of retention rates of colleges and the graduation rates at the program level.

Research and Results

Internal Comparisons

In this methodology, a cohort, or set of cohorts, is identified and compared or tracked over multiple years, allowing for the researcher to look at the time and magnitude of the losses to the cohort. Through a comparison of retention and graduation rates across multiple cohorts, a researcher can demonstrate the effectiveness of programs initiated to improve retention. By studying one cohort over several years, the researcher can demonstrate when students typically stop matriculating.

Cohort-to-Cohort First-Year Retention and Sixth-Year Graduation Rates

Overall, DePaul's average first-year retention rate for the 1989 through 1998 has fluctuated between 75% and 85%, showing a slight increasing trend over the last few years. Where available, corresponding graduation rates have shown a similar pattern of change, where increases from one cohort to the next in retention correspond with similar increases in subsequent graduation for the cohort. Previous research suggests that student support in the form of orientation, advising and introductory courses can lead to higher retention rates by easing some of the common anxieties and concerns that first-year students often have (Levtiz, Noel & Richter, 1999). The overall retention rate has been generally increasing since the 1995 cohort, the year in which DePaul's revised First-Year Program was fully implemented, including many programs for new freshman designed to increase their

Figure 1
First-Year Retention and Sixth-Year Graduation

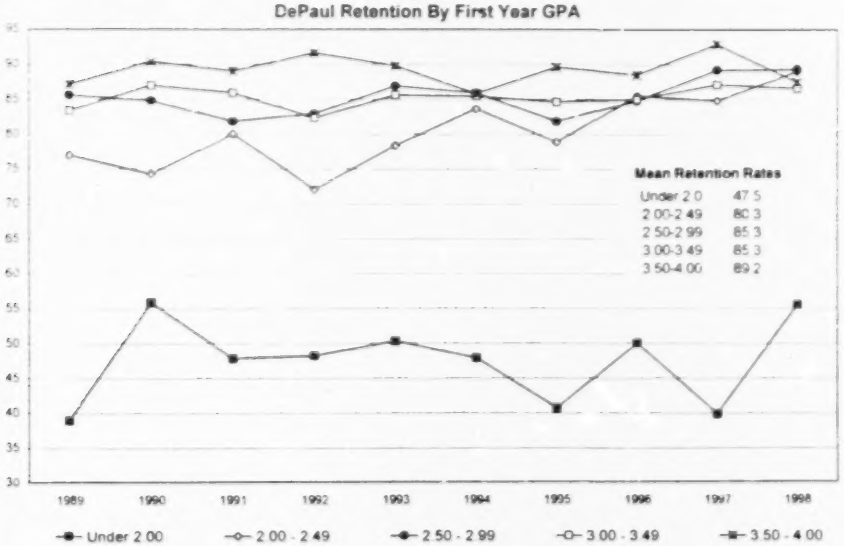
academic and social integration. It is hoped that these increases in retention will result in similar increases in graduation.

Similar charts were prepared for gender and race comparisons. These charts showed that females at DePaul have an average retention rate (81.1%) similar to males (80.6%), and both groups have maintained similar retention rates for most cohorts, though rates for females were usually a few percentage points above males. African-American students at DePaul (77.3%) had the lowest overall average retention rates. However, the retention rate for African-American students at DePaul has also shown the largest overall increase of any ethnic group – 15 percentage points since 1989. Asian students have the highest overall retention (85.8%) of any ethnic group at DePaul, and have shown rapid increases between the 1994 and 1998 cohorts. The only other group to show this kind of spike in retention is Hispanic students, with an increase of 10 percentage points over three cohorts and an overall retention rate of 82.7%. In general, retention rates for minority students at DePaul is increasing faster than Caucasian students, and in the 1996 and 1998 cohorts, minority student retention rates surpassed those of Caucasian students.

We also conducted retention analyses for each college/school at DePaul, as well as on some different academic indicators. DePaul has eight colleges, but freshmen retention is only studied in six of them (the Law School and the School for New Learning (an Adult Education school) were excluded for obvious reasons). Our Business school had the highest overall average retention rate of any college at DePaul (83.7%) while Liberal Arts and Sciences has had the lowest average retention rate of the three high-enrollment colleges (80.1%). For our Computer Science school, retention rates in recent cohorts are much more stable than previous cohorts due in part to rapidly increasing enrollments.

A student's first-year GPA is the cumulative GPA for all courses taken prior to the Fall term of the second year. Students earning a first-year GPA of less than 2.0 have extremely low retention rates, with an overall average of 47.5%, over 30% lower than any other GPA group. These low retention rates are mostly due to the academic probation policies, which state that students earning below a 2.0 GPA for any academic term have two academic terms to improve their GPA to at least 2.0 or the student is dismissed. Therefore, most students with a first-year GPA below 2.0 cannot be classified as "voluntary withdraws".

Figure 2
DePaul Retention By First Year GPA

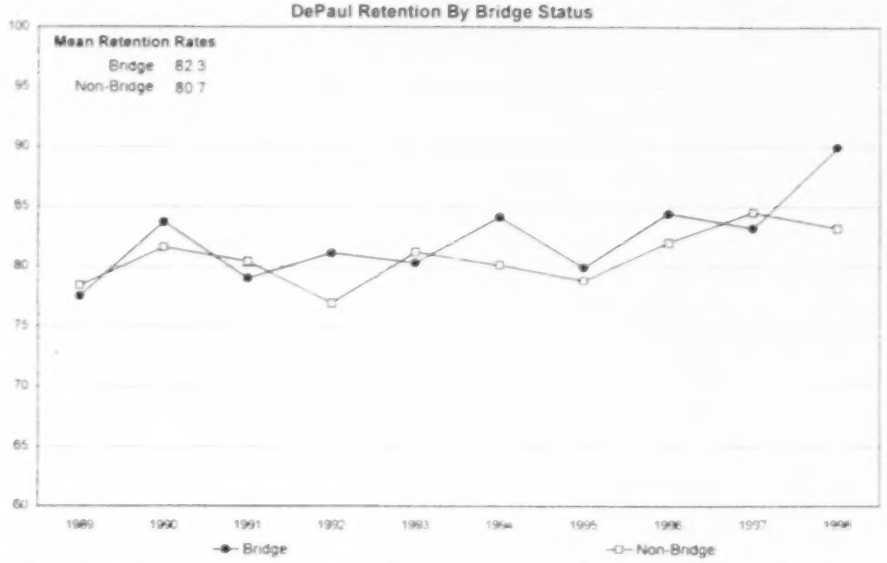


The remaining four GPA categories have much higher retention rates, and while there were larger gaps between these groups in earlier cohorts, they have become more similar to each other in the recent cohorts. Students earning a first-year GPA between 2.0 and 2.49 had an average retention rate of 80.3%. This rate increased 12 percentage points between the 1989 and 1998 cohorts, and has remained between about 85% and about 90% between the 1995 and 1998 cohorts. Retention rates for students earning a first-year GPA between 2.5 and 2.99 and between 3.0 and 3.49 both have an overall average retention rate of 85.3%, and retention rates for both

groups have remained between 80% and 90% since the 1989 cohort. The highest retention rates are those of students earning a first-year GPA of 3.5 and higher, with an overall average of 89.2%. First-year retention rates for these students have remained between 85% and 95% across all ten cohorts.

One other area of interest to stakeholders at DePaul is the performance of students who matriculate at DePaul as new freshmen after having completed the Bridge program. The DePaul Summer Bridge Program is an intensive 5-week college preparatory program for students requiring assistance in reading, writing, math, or study skills that takes place on campus during the summer term prior to cohort entry. Students participating in Bridge during the summer are included in the subsequent Fall entering cohort provided they enrolled as full-time freshmen in the fall. Participating students receive academic support throughout the first Fall term, and students who earn a 2.0 GPA or better in the Fall quarter are fully admitted to DePaul University. Retention rates for students participating in the Bridge Program have been higher than those of non-Bridge participants for six out of the ten cohort years, and have an average of 82.3%, compared to an average of 80.7% for non-Bridge participants. Retention rates for both groups are generally increasing, however, the Bridge students' retention rates have been increasing at a faster rate than non-bridge students, with an overall increase of over 12 points across all ten cohorts compared with 4.8 points for non-Bridge participants. The inherent nature of the Bridge program is to provide extensive academic and social support to participating students, to better help them adapt to DePaul. This support is extended through the Fall quarter of the first year. Thus the higher level of student support for Bridge students is a key factor in explaining why retention rates for Bridge students would be higher than that of non-Bridge students (Tinto, 1975; Levitz, Noel and Richter, 1999) even though the non-Bridge students are, by definition, more academically prepared for college.

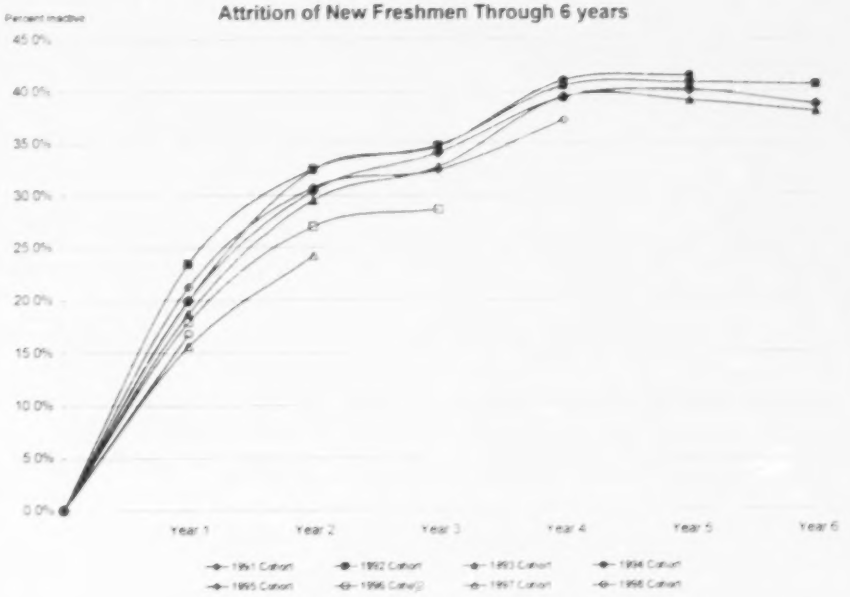
Figure 3
DePaul Retention By Bridge Status



Longitudinal Studies of First-Year Retention and Sixth-Year Graduation Rates

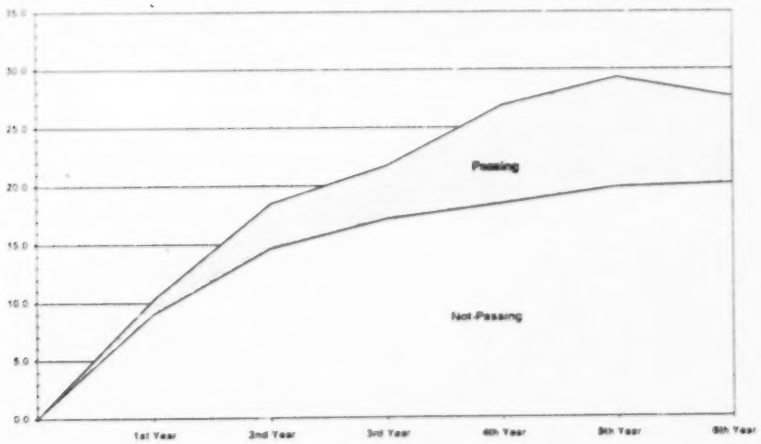
Through a comparison of retention and graduation rates across multiple cohorts as shown above, a researcher can demonstrate the effectiveness of programs initiated to improve retention. By a longitudinal study of one cohort, the researcher can demonstrate when students typically stop matriculating. As is shown, DePaul typically loses about 15-20% of new freshmen after the first year. Our sixth-year graduation rate tells us that approximately 55-60% of the original cohort of new freshmen graduates after six years. Therefore, between the second and sixth year, DePaul has lost another 20% of the *original* group of new freshmen on top of the 20% lost after the first year. In other words, by the end of the sixth year, DePaul has lost 400 of every 1000 freshmen enrolled. These analyses also demonstrate the consistency of this matriculation pattern.

Figure 4
Attrition of New Freshmen Through 6 years



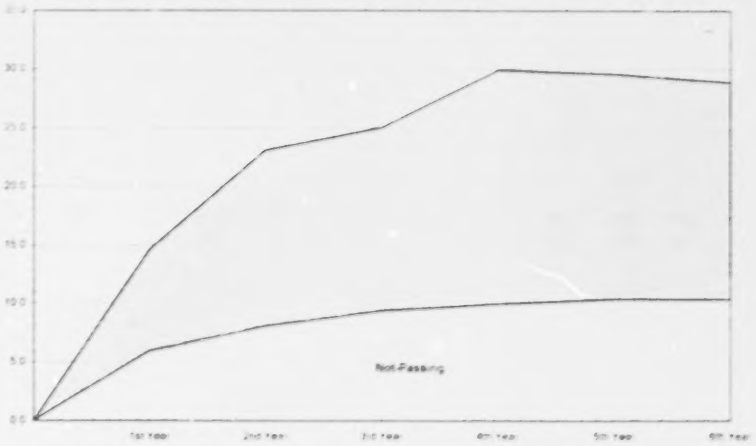
Although similar analyses have been done looking across race, gender, college and other demographic variables, one study that was particularly well received looked longitudinally at Bridge students. In particular, we compared Bridge and non-Bridge students on the likelihood that their withdrawal was voluntary versus non-voluntary. By the sixth-year, twice as many Bridge students than non-Bridge students leave DePaul with a cumulative GPA below 2.0 (not passing). The overall average sixth-year attrition rate for Bridge students (averaged over the 1988 – 1993 cohorts) is 47.6%, about half of those students had a cumulative GPA below 2.0. Figures 5a and 5b show the progression of voluntary and non-voluntary attrition for Bridge and non-Bridge students (respectively). While the overall attrition rates of Bridge and non-Bridge students remain very similar during the first through sixth years, the proportion of students "Not-Passing" is much greater for Bridge students than non-Bridge students.

Figure 5a
First-Through Sixth-Year Attrition Rates for Bridge Students



Figures 5a and 5b illustrate a nearly inverse relationship between Bridge status and attrition status – where the percentage of Bridge students who were "Not-Passing" at the time of withdrawal is almost equal to the percentage of non-Bridge students who were "Passing," and vice-versa. Although student support and services extended to Bridge students during their first year have impacted their retention rates, these services do not impact the graduation rates of these students. This might suggest the need for extending the duration of support offered to Bridge students, especially in the academic arena, in order to improve retention and graduation rates. This study, paired with the comparisons by GPA resulted in one administrator spearheading a larger study of what contributes to student success at DePaul.

Figure 5b
First-Through Sixth-Year Attrition Rates for Non-Bridge Participants



External Comparison: Benchmarking Student Retention and Graduation

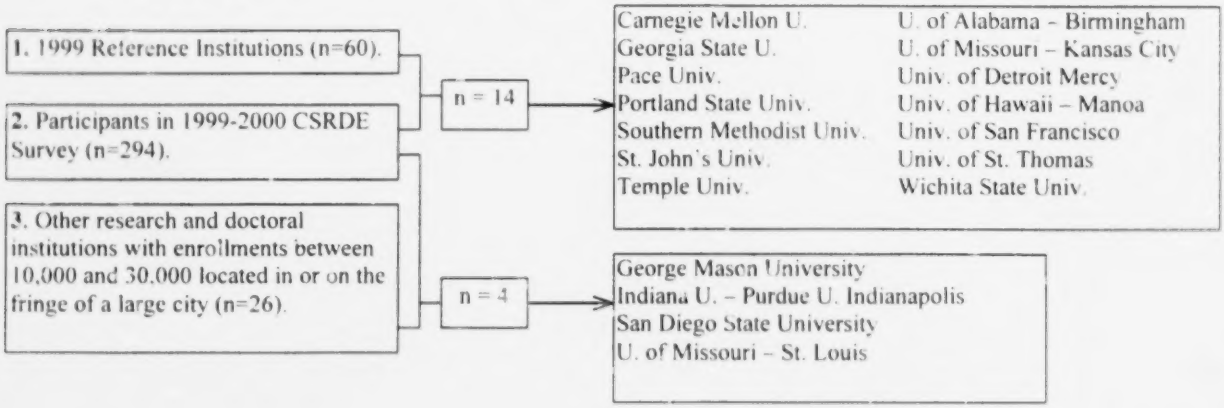
Benchmarking is an important tool to help institutional stakeholders, the public, the media, students and students' families understand how an institution compares to its peers on key measures of student success. In a time when much stock is being placed on accountability, and publications such as *U.S. News & World Report* are using retention and graduation as key indicators of academic quality in their college rankings (Graham & Morse, 1998), it is extremely important that these numbers are understood in context.

In order to provide both a broader view of retention and graduation rates as well as determine a point of reference for DePaul's retention and graduation rates, DePaul's rates were compared to data from eighteen reference institutions. For another study, we had generated a reference group of 60 institutions based upon their statistical similarity to DePaul, using a method similar to that outlined by Camp (1989). This list was compared to the list of institutions participating in the Consortium for Student Retention Data Exchange (CSRDE) annual survey of retention, administered by the Center for Institutional Data Exchange (C-IDEA) at the University of Oklahoma. The CSRDE consists of about 300 institutions from across the country and collects retention and graduation data by race and gender for several entering cohorts. Member institutions can receive data for a group of peer institutions of their choice for comparison purposes. Consequently we came up with a reference group consisting of 18 institutions. This procedure is outlined below.

This reference group was selected using three sources:

1. A list of institutions used in the most recent faculty salary comparison
2. A list of institutions from the 1999-2000 Consortium for Student Retention Data Exchange (CSRDE) survey

3. A list of urban Doctoral I, Doctoral II and Research II institutions with enrollments between 10,000-30,000


1. 1999 Reference Institutions (n=60).
2. Participants in 1999-2000 CSRDE Survey (n=294).
3. Other research and doctoral institutions with enrollments between 10,000 and 30,000 located in or on the fringe of a large city (n=26).
n = 14
n = 4
Carnegie Mellon U.
Georgia State U.
Pace Univ.
Portland State Univ.
Southern Methodist Univ.
St. John's Univ.
Temple Univ.
U. of Alabama - Birmingham
U. of Missouri – Kansas City
Univ. of Detroit Mercy
Univ. of Hawaii – Manoa
Univ. of San Francisco
Univ. of St. Thomas
Wichita State Univ.
George Mason University
Indiana U. – Purdue U. Indianapolis
San Diego State University
U. of Missouri – St. Louis

1998 Reference Institution Statistics			
Cohort Information	**Highest**	**Lowest**	**DePaul**
Total Cohort	3,124	476	1,443
Female Cohort	1,814	268	844
Male Cohort	1,310	204	599
African-American Cohort	551	13	123
Hispanic Cohort	658	0	176
Asian Cohort	1,038	0	139
Caucasian Cohort	1,749	131	904
Minority Enrollment*	35.0%	2.0%	33.3%
Students 24 or older*	7.0%	0.0%	1.8%
Living on Campus*	96.0%	0.0%	54.2%
First-Term GPA < 2.0*	37.0%	6.0%	12.6%
Part-Time Enrollment (All Undergraduates)	48.0%	4.0%	37.8%

*At least one institution reported no value for this field

Source: 1999-2000 CSRDE Report, OIPR Fact File

These institutions represent a mix of Private, Public and urban institutions whose student bodies resemble that of DePaul on several key measures such as institutional control, Carnegie Classification[1], size[2], freshmen cohort size, minority student enrollment, average undergraduate student age, percentage of part-time undergraduates, percentage of undergraduates living on campus, and percentage of undergraduates earning a first-term GPA below 2.0. All institutions participated in the 1999-2000 CSRDE Retention Survey. DePaul falls near the median of the reference group in most of these institutional measures.

Institutional Characteristics of Reference Group and DePaul							
	Control		Carnegie Classification[1]			Size[2]	
	Public	Private	Doctoral Extensive	Doctoral Intensive	Master's I	Large	Medium
# Peers	11	7	6	11	2	6	12
DePaul		✓		✓		✓	

Source: 1999-2000 CSRDE Report, Chronicle of Higher Education.

The data for first-year retention and sixth-year graduation were plotted on a box plot, which illustrates the range of rates over the entire reference group.

[1] The Carnegie Classification codes were updated in August 2000. The classifications in this report reflect these new changes.

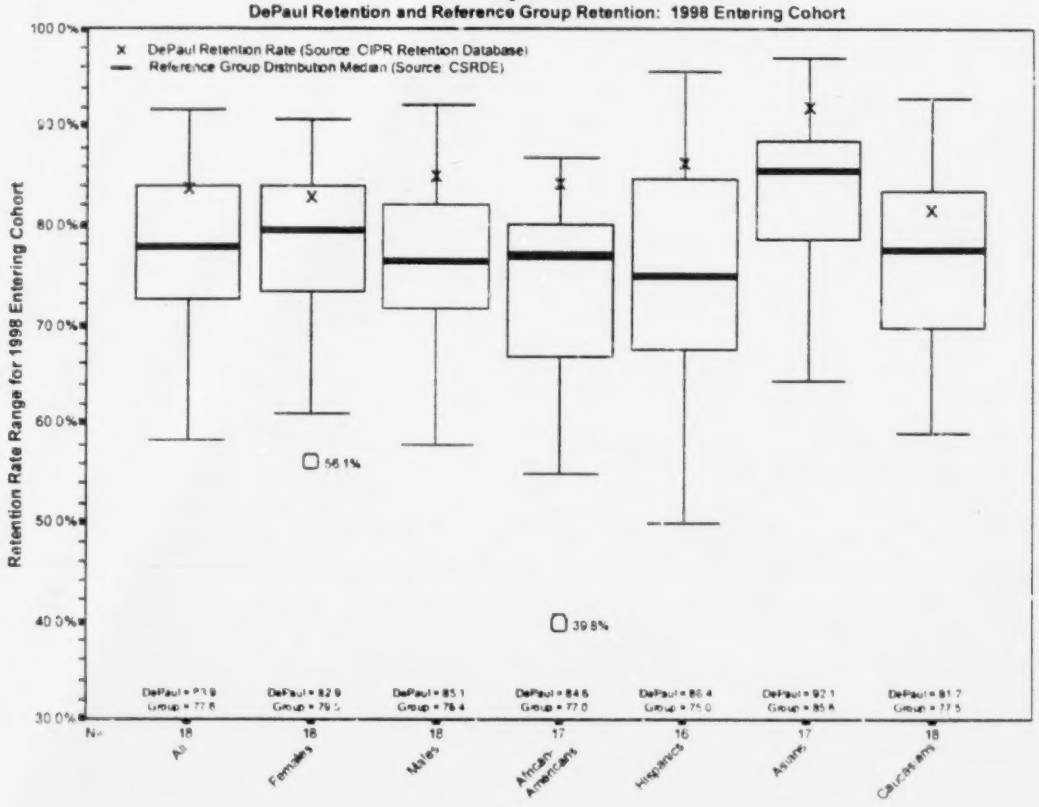
[2] The 1999-2000 CSRDE Report defines 'Large' as an institution with having a total enrollment of at least 18,000 and 'Medium' as an institution having a total enrollment between 5,000 and 17,999.

Benchmarking First-Year Retention: DePaul vs. Reference Group

Figure 6a plots the distribution of first-year retention rates across all reference institutions for the 1998 entering cohort against the actual first-year and sixth-year rates of DePaul's 1998 entering cohort. Plots were created for the entire entering cohort, and for gender and ethnicity. An '**X**' marks DePaul's first-year retention rate for each group in Figure 6a. The number of reference institutions included in each breakdown appears along the bottom of the chart; note that not all institutions reported enrollments for each demographic group for the 1998 entering cohort.

Figure 6a

DePaul Retention and Reference Group Retention: 1998 Entering Cohort



For the entire entering cohort of 1998, DePaul's retention rate (83.9%) was 6.3 percentage points higher than the reference group median (77.6%), and ranked at the 74th percentile of the distribution, meaning DePaul's retention rate is higher than about three-quarters of the reference institutions. First-year retention for females at DePaul also exceeded the peer group median by about 3 points, and ranked at the 69th percentile. The females in the reference group had a higher retention rate than males, with a median about 3 points higher than males. Retention for DePaul males ranked at the 87th percentile, meaning DePaul males have higher rates than females at DePaul for the 1998 cohort and also females in the reference group. First-year retention for DePaul males exceeds the reference group median by over 8 percentage points.

DePaul's first-year retention rate for African-American students (84.6%) was higher than that of the reference group (77.0%), ranking at the 85th percentile of the reference group distribution. Hispanic students in the reference group have the largest range of first-year retention rates (from 50.0% to 95.4%), with a median of 75.0% - 11.4 percentage points below DePaul. Compared to the distribution, Hispanic students at DePaul ranked at the 81st percentile. Asian students in the reference group had the

smallest range (64.4% to 97.0%). DePaul ranked in the 79th percentile of the reference group distribution for Asian student retention, with a rate of 92.1%. The median first-year retention rate for Caucasian students in the reference group was 77.5%, about 4 points below DePaul's retention rate (81.7%), which ranked at the 70th percentile.

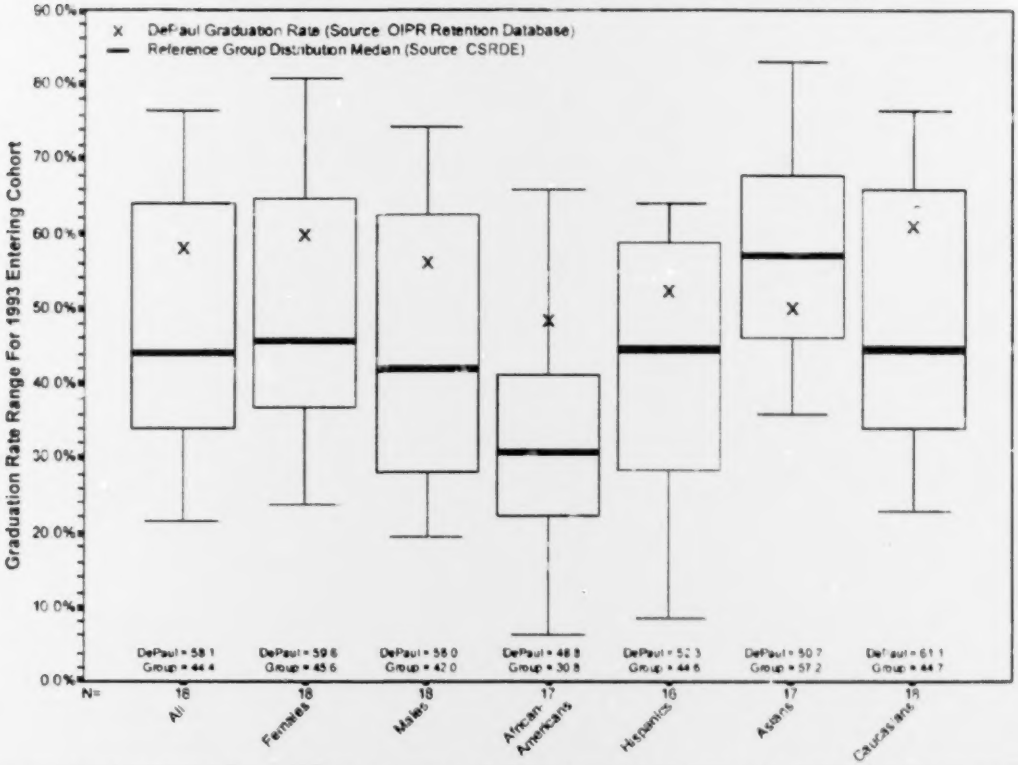
The differences between DePaul and the reference group vary greatly and while DePaul appears to perform better than the reference group in some areas (male and Hispanic student retention), there is little difference between DePaul and the reference group in other areas (female and Caucasian student retention). But for most groups DePaul's retention rate for the 1998 entering cohort is at or beyond the 75th percentile of the reference group distribution. In general, we can conclude that DePaul's retention rate is at about what we should expect, given our reference point, and in some cases, better than we should expect.

Benchmarking Sixth-Year Graduation Rates: DePaul vs. Reference Institutions

Figure 6b shows DePaul's sixth-year graduation rate for the 1993 entering cohort was plotted against the distribution of graduation rates among the eighteen reference group institutions. There were only two years of available reference data for graduation rates, and these rates did not differ greatly between the 1992 and 1993 cohorts for any institution. For this reason, the average between the graduation rate for the 1992 and 1993 cohorts was taken for each institution. The number of reference institutions included in each breakdown appears along the bottom of the chart; note that not all institutions reported enrollments for each group for the entering cohorts.

Across all groups except Asians, DePaul's graduation rates are at least 7 points higher than the median of the reference institutions. For most groups DePaul ranked between the 50th and 75th percentiles of the reference group distributions meaning that in most cases, DePaul's graduation rate is at or above what we should expect given the reference point. For the entire 1993 cohort DePaul's graduation rate (58.1%) ranked at the 67th percentile of the distribution compared to the reference group median (44.4%). Like the reference group, graduation rates for DePaul females (59.6%) are slightly higher than those of males (56.0%). The difference between males and females in the reference group (3.6 points) is identical to the difference between rates for DePaul males and females. For both males and females, DePaul's retention rate exceeds that of the reference group median by 14 percentage points. However, in terms of the distribution, DePaul males ranked at the 70th percentile while females ranked between the 65th and 66th percentiles. Therefore, in terms of expectations based on the reference group median, the retention rates for males at DePaul are better than females.

Figure 6b
DePaul Graduation and Reference Group Graduataion: 1993 Entering Cohort



Sixth-year graduation rates for African-Americans are lower than those of other ethnic groups, both for DePaul (48.8%) and the reference group (Median=30.8%). The range of graduation rates for African-Americans in the reference group was the largest of any group, ranging from 8.4% to 66.0% across seventeen institutions. In terms of the reference group distribution DePaul is performing better than three-quarters of its peers in terms of African-American graduation rates. So while graduation rates for African-American students are lower than students of other ethnicities, this is not an uncommon phenomenon. Hispanic students in the reference group had a median graduation rate of 47.1%, about 8 points below DePaul, which falls in the 64th percentile of the distribution. There was also a great deal of variation in the reference group for Hispanic graduation rates, which ranged from 8.5% to 64.3% across sixteen institutions. The only group that DePaul ranked below the reference group median (32nd percentile) for graduation rates was for Asian students. Graduation rates for Asian students at DePaul (50.7%) and in the reference group (Median=57.2%) are the highest of any group. However, relative to the reference group, DePaul's graduation rate for Asian students is below expectations. Caucasian students at DePaul have a sixth-year graduation rate of 61.1%, 16 percentage points higher than the reference group median (44.7%), and ranked at the 65th percentile of the reference group distribution.

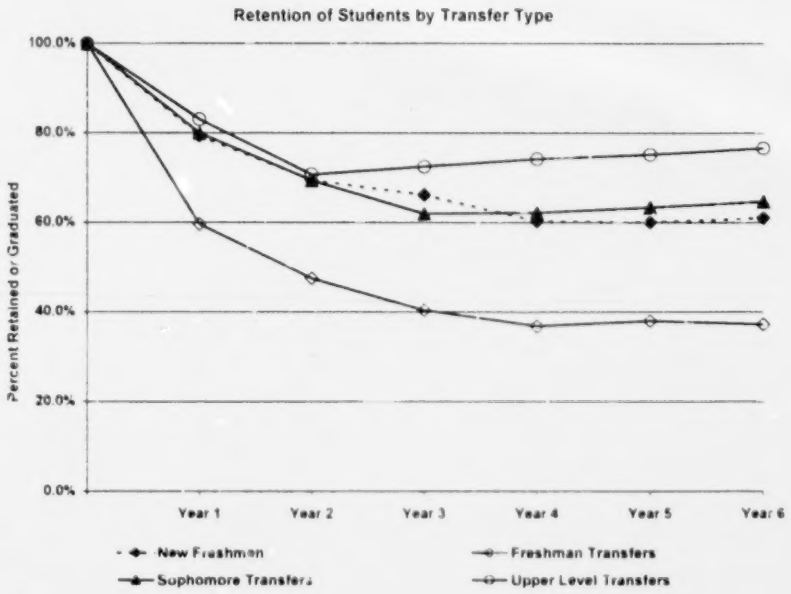
Though DePaul has sixth-year graduation rates that exceed the reference group median for most groups, only the African-American cohort reached the 75th percentile of the reference group distribution. For all gender and ethnic groups in this analysis, DePaul's first-year retention ranked between the 32nd (Asians) and the 77th (African-Americans) percentiles for each distribution.

Entry/Intent Comparisons

The studies mentioned have all involved first-time freshmen, yet these students are in the minority at our institution, as they are across the country. A recent investigation of baccalaureate recipients each June has shown an ever-increasing proportion of students who did not begin their academic careers at DePaul. Therefore, we have undertaken retention studies of other student populations, including transfer students, part-time adult students, and graduate/professional students. The studies for each of these different student populations provide a more complete institutional picture of student retention than can be understood from strictly looking at the traditional student.

Transfer Students

All of our studies of retention on freshmen have shown that, typically, DePaul loses about 20% of all new freshmen after the first year. Our sixth year graduation rate tells us that approximately 60% of the original cohorts of new freshmen graduate after six years. Therefore, between the second and sixth year, DePaul has lost another 20% of the *original* group of new freshmen on top of the 20% lost after the first year. In other words, by the end of the sixth year, DePaul has lost 400 of every 1000 freshmen enrolled. For transfer students, the more hours of college credit a student transfers into DePaul, the more likely it is that he/she will complete a degree at DePaul. Approximately 90% of students who enter DePaul with junior or senior standing persist to the second year and over 75% receive their degree. Sophomore-level transfers have retention patterns very similar to those seen for new freshmen. Freshmen transfer students do not tend to fair well at DePaul, with over 50% becoming inactive by the fourth year - many of whom were not passing at the time they withdrew.

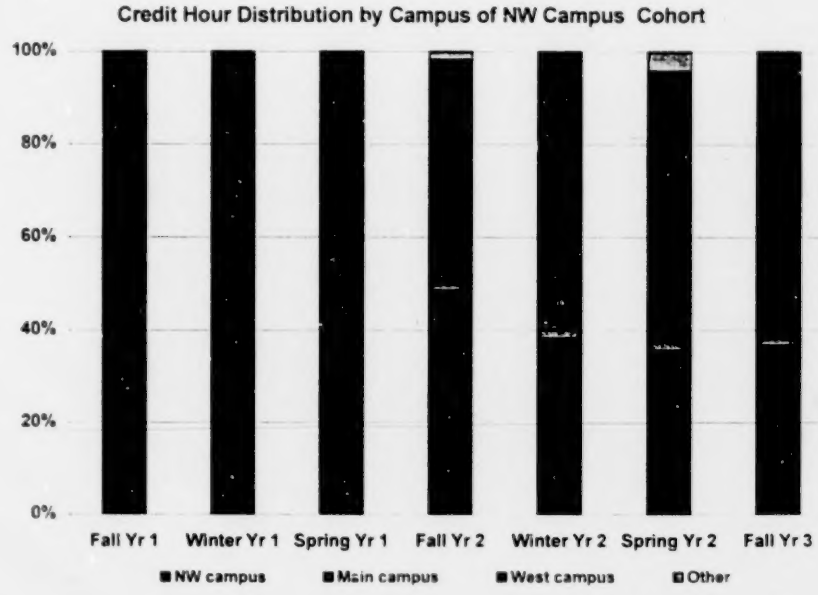


Our analyses also included a study of feeder institutions, both individually and by type. We found that, while there was not a wide disparity in first-year retention rates across transfer institution types, the likelihood of a student graduating with a DePaul degree after several years of attendance seems to vary depending upon the type of institution from which he/she transferred. Students who transfer from various four-year private institutions (both in- and out-of-state) or Chicago's City Colleges appear less likely to complete their degree. We were also able to investigate the phenomenon of "transfer shock" -- the decline in GPA experienced by transfer students during their first year after transfer (Al-Sunbul, 1987; Cejda, 1994; Hills, 1965). Typically, we saw students from two-year schools experiencing a slight to moderate decline in GPA (.1 to .5 points) on average. Students from four-year institutions experienced little transfer shock, as defined here. Because of these studies, DePaul has undertaken many initiatives aimed at improving transfer student success, including an improved transfer student orientation and specific courses targeted on new transfer students.

Adult Students

DePaul University has seen an expansion of its facilities from beyond the two main campuses in the City of Chicago to several satellite campuses in the suburbs. These campuses are designed to cater to the needs of the working adult student. Annually increasing enrollments at these locations testifies to their success. We have undertaken several studies of adult student retention and mobility across these campuses to investigate how these students complete their degree programs.

We started by creating "cohorts" of new part-time (undergraduate and graduate) students and tracking their course enrollments. Very quickly, we realized that looking at an annual snapshot of enrollment was inadequate given the transitory enrollment patterns of these students. Thus, we looked at credit-hour enrollments by location on a term-by-term basis. Furthermore, given the difference in requirements across programs, we separated out cohorts by college, level and suburban campus in the first term. While this was done for many colleges, the data presented here in Figure 8 are for the new students in the graduate school for business (GSB) who, during their first term, entered the University through one of the suburban locations.



By following the enrollment patterns of these students, we found that by the beginning of the third year, half of the credit hours being generated by this group are through the main Chicago campus. It would appear that these campuses do serve as portals to the larger university. The persistence patterns lend credence to the transitory nature of these students' enrollments. While there was a general decline within the course of the academic year from one term to the next, the beginning of a new year brought a slight upswing in enrollments from the previous spring term. Suburban students did not differ significantly in persistence to graduation from students who started at the main campus.

Lessons Learned about making an impact

The framework for considering the value of the various analyses in the context of the institution comes from the Chickering and Gamson (1987) study of the seven principles of good practice in undergraduate learning revised to reflect the institutional researcher/audience relationship. We would like our data and information to result in our audiences learning new values and shifting opinions. Given our various audiences, how well do we think the comparative studies we performed met the requirements of "Good Practice"?

1. **Good practice encourages contact between the researcher and the audience**: The use of comparative studies provides multiple contacts with the audience. This part of the process worked well. Unfortunately for us as an urban institution with a high percentage of non-traditional students, we have had limited contact with the audience of individuals concerned about the success of these students. We

have worked with the various deans, but in general the comparative analyses do not automatically cause frequent interactions with the appropriate college representatives and the researcher. We have undertaken a number of initiatives to increase such contact. For example, with regards to transfer students, plans exist to bring together the representatives to meet with their compatriots at various two-year feeder institutions. In doing so, we will be able to investigate the most appropriate indices to use for transfers and develop a more comprehensive research agenda. Also, while we have an official center for advising and some functions in student personnel related to student success, this audience is only beginning to emerge as an organized group. The discussion of success by entry type did stimulate some interest with this group.

2. **Good practice develops reciprocity and cooperation among the audience**. With our institution in a growth mode, creating a sense among some that we are currently over capacity, there has not been a compelling force towards improving retention. In addition, the results from the comparison of our results with those of the institution-level reference group did not create a sense of urgency. The differentiation did cause some discussion among the various audiences as to how the success of some groups - such as the bridge group - might be improved. The demonstrated differences in the retention of some groups, such as the increase among those in the 2.00-2.49 GPA group and the lower then expected retention rate of Asian students, prompted some discussion as to the root causes of those differences. However, the deans were not inclined to create initiatives that crossed college lines. One of the things we are working on is to create a type of "meta-audience" for retention and graduation studies built around the core of the advising movement. Unfortunately this movement has been slowed because several key individuals are involved in the implementation of the PeopleSoft ERP.

3. **Good practice uses active learning techniques**. The studies resulted in involvement of the various audiences in both a direct and an indirect manner. The initial presentation of the results of these studies did stimulate some suggestions for further analyses of the data, particularly from our deans who were interested in their particular students. These additional analyses were completed, but there has been no systematic follow-up. The method of providing the audience with their own data analysis tool would seem to be a much better way to achieve more active engagement. One of our colleagues has built an OLAP cube that we are now starting to share with concerned administrators and faculty that enables the individual to conduct many independent investigations of student success. We are also looking at some off-the-shelf reporting tools that will support independent studies. The comparative study will promote active learning if the questions that are raised are nurtured, and if those who raise the question are actively involved in the follow-up research projects.

4. **Good practice gives good feedback**. Many of these studies came at the request of several of the senior administrators. Because we had been participating in the C-IDEA exchange we had both internal databases that we could employ and also access to external data. Unfortunately these data and hence the studies were again limited to first-time full-time freshmen. It is much more complicated to give timely feedback on transfers students, for example. Also our conversion to a new software system threatens the continuity of our data and required the siphoning off of resources that otherwise would have been available. The use of the trends over time for first year retention seemed to be one of the better balances of looking at persistence and doing so in a timely manner. There is also a First-Year Program at our university that is more of a natural audience for the first year retention rates. Looking at six-year graduation rates did not seem to do more than provide some "bragging rights". One of the other aspects of good feedback is the comprehensiveness of the studies. In our case we looked at persistence both for those at a given point and longitudinally. This did give a more complete and context-oriented set of feedback.

5. **Good practice emphasizes time-on-task**. The comparative study in and of itself is a presentation of a set of facts. The amount of time on task by the audience depends on the level of concern that exists, or that the research creates. These studies were moderately useful. One thing they do is that they allow for the creation of multiple events. We spaced them over several years to continue to keep the issue on the radar screen of the audience. The speed with which they can be updated is also helpful in that the trend lines can be updated on an annual basis. Also there is some ability to do detailed statistics at the program level for key indicators with an external reference and a trend line and a comparison of which internal group performs better and poorer.

6. **Good practice communicates high expectations**. Through the use of the reference group, we were able to set an expectation of what our retention and graduation should be, but the fact that DePaul is already performing at, or above, the level of the reference group tempers some of the movement towards change. If it had been otherwise the results would have been much more compelling. We resisted the temptation to select a group of small private schools or reconstitute the reference group to make our institution look worse. There is some discussion about selecting a true benchmark group, particularly on a college-by-college basis. At present most of the expectation of improving retention comes from the fact that our mission says that it is the right thing to do. The operational definition of the desired improvement has not yet matured into focused activity.

7. **Good practice respects diverse talents and ways of learning**. The use of comparative analyses is most compelling to those who are looking for limited key indicators and the tracking them over time, institutions, and internal groups. This group is well served by our comparative analyses. Those who are "context" people and "people" people are less well served. These studies also would lend themselves to estimating losses in tuition as suggested by Noel et al. (1999) but we have not formally done that yet. There has been some informal estimation done and it keeps the attention of financial administrators as one of their diverse ways of learning.

Summary

In summary, the main strengths of the comparative analyses are that they are simple, can be done on a repeatedly, can use groups such as colleges that have organizational implications, and can be "redone" fairly rapidly when someone has a suggestion. These studies function as "trip-wires" that can be used to test the sense of reality that individuals have. As such they can force attention on the relative retention of the students when an external group is identified. Their limitation is that they do not help understand the causes of attrition, and they have limitations of group size for some of the demographic breakdowns. They can be a cause for limited activity since they can show that the institution is doing "as well as others like us are doing". One final limitation is that only a very limited number of key measures can be considered in any given report. If multiple groups are used with more than two measures, the complexity increases rather rapidly.

One of our next steps will be to strengthen our databases, distribute definitions through a data dictionary, and move toward the OLAP cube. In addition, we will be working to form the "meta-customer" for our retention studies. We have augmented our research practices based on the feedback from several focus groups and have started discussions on a methodology for transfer students. Also we are looking for best ways to provide persistence data for program review and outcomes assessment. This involves not only the statistics to provide but also the method for providing them from our databases. We are also conducting more focus groups and looking at models of individual retention to increase the diversity of the information we provide.

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